

A black and red microphone with a red cable is positioned on the left. To its right are three concentric, light gray curved lines representing radio waves.

# policy NEWS.

## REVISED SOFTWARE FORMAL INSPECTION STANDARD ADDRESSES TECHNOLOGY CHANGES

JUNE 17, 2013

NASA-STD-8739.9 supersedes NASA-STD-2202-93 and updates the process for conducting formal inspections of NASA software.

NASA released a new Software Formal Inspection Standard (NASA-STD-8739.9) on June 17, 2013, to address changes in technology and the field of software development. With Dr. Forrest Shull, one of the nation's leading software inspection experts, leading the update effort, Software Assurance Working Group members and Software Engineering Working Group members from across the agency collaborated on the revision.

The formal inspection process is a set of best practices used to perform reviews of documents, case studies, models, design, code, plans and so on, in a precise, repeatable manner with the purpose of finding and removing defects and discrepancies as early as possible in the software life cycle.

## WHAT'S NEW.

### *Highlights of the revised standard include*

- 1.** Incorporates the **latest research** and **best practices**.
- 2.** Contains **fewer requirements** to create flexibility and accommodate various methods of completing formal inspections without removing the basic practices that make inspections so effective.
- 3.** Addresses more **contemporary project concerns** including software safety, complex electronics inspections, agile development, commercial off-the-shelf and software acquisition.
- 4.** Offers **recommendations** for when to conduct formal inspections.
- 5.** Provides more **guidance for tailoring inspections** for different types of artifacts (e.g., project plans and auto-generated code).
- 6.** Aligns with NASA Procedural Requirement 7150.2A NASA Software Engineering Requirements.
- 7.** Provides the rationale behind the requirements.
- 8.** Includes a more **detailed introduction**, making the standard more accessible and user-friendly to employees who are new to the program area.

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## REVISED SOFTWARE FORMAL INSPECTION STANDARD ADDRESSES TECHNOLOGY CHANGES *CONTINUED*

### **WHY IT MATTERS**

Although formal inspections are not mandatory, if one is being conducted, employees must adhere to the requirements of this standard. Too often, a group claims to perform formal inspections, but deletes some of the basic practices that make this kind of peer review so effective. This standard ensures that those basic principles and practices are maintained and followed if formal inspections are used. The revisions were designed to make the requirements more useful and easier to follow.

### **RATIONALE**

Prior to the rewrite, the standard was more than a decade out-of-date. The new standard reflects expert knowledge and the latest perspective on formal inspections to ensure employees are equipped with the right information to do their jobs successfully.

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### **TAKE ACTION**

Review NASA-STD-8736.9 and consider conducting software formal inspections, especially on safety- and mission-critical software or components. Although formal inspections are an investment upfront, when performed properly, they improve the quality of software and save money by revealing more defects early in the development process.

Have questions regarding the new standard? Contact Martha Wetherholt, NASA Technical Fellow for Software Assurance, at [Martha.Wetherholt@nasa.gov](mailto:Martha.Wetherholt@nasa.gov).

***or***

View the official NASA document at  
<http://www.hq.nasa.gov/office/codeq/doctree/ns87399.htm>